

BEST AVAILABLE COPY

REMARKS

Applicant acknowledges with appreciation the Examiner's allowance of claims 6, 11-13, 15 and 16. Claims 1-5, 9, 10, 14, 17 and 18 were previously cancelled, without prejudice to their underlying subject matter. Claim 7 is presently cancelled, without prejudice to its underlying subject matter. Claims 6, 8, 11-13, 15, 16, and 19-24 are pending in this application.

Applicant is unclear what is requested in the Office Action at paragraph 1 with respect to the drawings. Repeated attempts by the Applicant to reach the Examiner or his Supervisor on this issue have been unsuccessful. Applicant understands that the substitute and corrected drawings already submitted on June 12, 2003, are approved. These are respectfully requested to be entered in the application. If the Office Action is requesting that additional copies of the drawings and corrections be submitted, such are herein supplied.

Claims 19-24 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully traverse this rejection.

The Office Action at 2 asserts that the specification "fails to describe an embodiment ... in which the clear package completely surrounds the imager die." (Emphasis omitted). Applicant directs the Examiner's attention to the following sections of the amended specification and Figure 2: paragraph [0010] states that "Figure 2 shows an imager device in a packaging system as shown in Figure 1," and paragraph [0012], third line, of the amended specification, discloses that "[o]ptionally, the entire package is transparent." (emphasis added). Figure 2 illustrates a photodetector 199 with photogate PG completely surrounded by the clear package described in the specification. Therefore, there is sufficient description in the specification to support the claim 19 limitation that the "clear package completely surrounds said imager die and is transparent in all directions."

Claim 19 and dependant claims 20-24 are in compliance with 35 U.S.C. § 112, first paragraph and Applicants respectfully request that this rejection of claims 19-24 be withdrawn.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,827,118 (Shibata et al.) in view of U.S. Patent No. 6,191,359 (Sengupta et al.). Applicants respectfully traverse this rejection.

Claim 7 is presently cancelled without prejudice. Claim 8 recites, inter alia, “forming a clear plastic quad flat package for said imager device, wherein said imager device is totally encased within said clear plastic quad flat package” and “wherein said imager device is positioned to receive light that passes through said clear plastic quad flat package from any of a plurality of different incoming angles and through different surfaces of said clear plastic quad flat package.”

Shibata et al. and Sengupta et al., whether considered alone or in combination, do not teach or suggest all the limitations of the invention defined by claim 8. Furthermore, there is no motivation to combine Shibata et al. with Sengupta et al, particularly since Shibata et al. teaches away from the packaging process of Sengupta et al.

Shibata et al. discloses a dual in-line package, which is an inserted-style packaging type (column 5, line 13). As acknowledged by the Office Action (page 3), this is not a quad flat package. The package disclosed by Shibata et al. does not position the light sensitive device within to receive light from “a plurality of different incoming angles and through different surfaces of said clear plastic package,” as in the method of claim 8. As shown in Figures 19 and 20 of Shibata et al. the “light to be detected” can only pass through a single surface of package (20), the top surface, to reach the imaging device. The inclined sides of the package are disposed outside the perimeter of the imager device (10) and would not transmit light thereto. While the entire package of Shibata et al. may be composed of the same light transmitting material, the imaging device inside the package is

not combined with this package as is in the claimed invention. Thus, Shibata et al., individually, would not have rendered the claimed subject matter obvious for this reason.

Sengupta et al. relates to a windowed package capable of withstanding a mass reflow process (abstract). Sengupta et al. discloses a package suitable for an image sensor including a window having a slightly larger area than that of the light-sensitive portion of the die. Sengupta et al. does not teach or suggest that an “imager device is positioned to receive light that passes through said clear plastic quad flat package from any of a plurality of different incoming angles and through different surfaces of said clear plastic quad flat package,” as recited in claim 8. Therefore, Sengupta et al. does not teach or suggest all the limitations of the claimed invention and cannot provide the subject matter missing from the disclosure of Shibata et al.

Moreover, there is no motivation to combine Shibata et al. with Sengupta et al. since such combination is taught away from by the references. According to Sengupta et al., during its packaging processing, the die is positioned into the package and then is baked repeatedly (column 3, lines 23-44). Then, according to Sengupta et al., “[w]hen the sealed package is ready to be remounted, it is removed from the bag and mounted to a circuit board using a mass reflow process,” (column 3, lines 65-67). During Sengupta et al.’s mass reflow process, the peak package body temperature is approximately 225° C (column 4, lines 4-5). Since the chip of Shibata et al. is disclosed as having a low heat resistance, incapable of withstanding temperatures above 150°C and 180°C (see Shibata et al. column 2, lines 53-68; and column 3, lines 1-4), Shibata et al., in fact, teaches away from its combination of Sengupta et al., which uses a package that requires processing at temperatures in excess of 180°C. Thus, these references cannot be combined.

Since Shibata et al. and Sengupta et al., whether considered alone or in combination, do not teach or suggest all the limitations of the claimed invention, and since Shibata et al. teaches away from the combination of Sengupta et al., claim 8 is patentable

over these references. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claim 8 be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Dated: November 21, 2003

Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371

Ryan H. Flax

Registration No.: 48,141

DICKSTEIN SHAPIRO MORIN &

OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorney for Applicant

Attachments

BEST AVAILABLE COPY